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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,906	01/11/2006	**Brian Snowdon**	02771	5805

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EXAMINER	
HARP, WILLIAM RAY	
ART UNIT	**PAPER NUMBER**
4174	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,906	SNOWDON, BRIAN	
	Examiner	Art Unit	
	William R. Harp	4174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-10 and 12-18* is/are rejected.

7)☒ Claim(s) *2,3 and 11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/8/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on July 8, 2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "19" has been used to designate both plenum chamber [Page 6, Line 8] and top sheet [Page 6, Line 21].

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "41" has been used to designate both valves [Page 7, Line 19] and hose [Page 7, Line 21]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1, 3, and 18 are objected to because of the following informalities: the examiner objects to the use of the term "its" in Claim 1, Line 4, Claim 3, Line 2, and Claim 18, Line 2. The term "its" does not clearly set forth the metes and bounds of the patent protection desired. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 4-7, 9, and 10 rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson (GB 753190 A).**

7. **Regarding Claim 1**, Atkinson teaches an elongate container (delivery unit U) for the transport of bulk powders [P 1, L 11-12], the bottom of the container being provided with a longitudinally sloping membrane support (wall 10) extending along at least a portion of the length of the container, a gas-permeable membrane (sheet 20) mounted on said support, said support being unsupported relative to the container between its longitudinal and transverse ends. The support wall 10 illustrated in Figure 1 is supported at its edges and no other structure is shown to support the wall between its longitudinal and transverse ends.

8. **Regarding Claim 4**, Atkinson teaches a plurality of membranes (20) is arranged along the base of the container in lengthwise juxtaposition. Walls 10 and 11

each have a sheet 20 attached which the examiner interprets to be a plurality of membranes.

9. **Regarding Claim 5**, Atkinson teaches adjacent membranes slope in opposite directions along the length of the container. The walls 10 and 11 slope toward one another and since each wall has a membrane attached to it; the membranes also slope toward one another.

10. **Regarding Claim 6**, Atkinson teaches a container (pressure chamber 34), at least when arranged for unloading of bulk powder therefrom, is provided with a discharge pipe (flexible conduit 37), one end of which is located adjacent the lowest point of each membrane. The pressure chamber is located adjacent to the lowest point of the membrane as illustrated in Figure 2.

11. **Regarding Claim 7**, the examiner interprets the means plus function recitation, "means, located outside the container, for pneumatically conveying powder from the container to a position exterior thereof" to mean the hose 41 illustrated in Figure 8 of applicant's disclosure. The flexible conduit 37 of Atkinson is considered by the examiner to be a means for pneumatically conveying powder from the container to a position exterior thereof.

12. **Regarding Claims 9 and 10**, the examiner interprets the means plus function recitation, "means are provided, at least when the container is to be unloaded, to cause powder located above the membrane to be fluidised" and the recitation " means includes means for delivering gas under pressure to the space below the sloping membrane" to mean the structure of the blower 55, valve 57, and pipe 56 illustrated in Figure 7 of applicant's disclosure. Atkinson teaches a compressor 28 connected to a conduit 26

with a valve 31 disposed between conduit 26 and conduit 25, which leads to conduit 24. The conduit 24 supplies air to the spaces 23, which is forced up through sheets 20, and causes the pulverulent material to be fluidized [P 3, L 29-44; Page 4, L 4-14].

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. **Claims 15 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson**.

16. **Regarding Claim 15**, Atkinson teaches a container (delivery unit U) for the transport of bulk powders [P 1, L 11-12], the bottom of the container being provided with a longitudinally sloping membrane support (wall 10) extending along at least a portion of the length of the container, a gas-permeable membrane (sheet 20) mounted on said support, said support being unsupported relative to the container between its longitudinal and transverse ends. The delivery unit U is detachably connected to a truck

T [P 2, L 126-127] and the frame 6 of the delivery unit U may be made ambulant by front wheels 7 and rear wheels 8 [P 2, L 128-130]. Pressurized gas is fed to the membrane by a compressor 28 by way of conduits 26, 25, and 24. The bulk powder will become fluidized by the pressurized air [P 4, L13-14]. The powder flows through air lock L into pressure chamber 34 and into conduit 37 which conveys the powder to the desired location. [P4, L 48-76]. It would have been obvious to one of ordinary skill at the time of the invention to use the delivery unit of Atkinson in its normal and expected fashion to perform the method claimed. It has been held that in order to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to amount to the mere claiming of a use of a particular structure. See Ex parte Pfeiffer, 1962, C.D. 408 (1961).

17. **Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson as applied to claim 1 above, and further in view of Holm et al. (USP 3519310).**

18. **Regarding Claim 8**, Atkinson teaches the container of Claim 1. Atkinson fails to teach that each membrane is inclined at an angle of from 10° to 15° relative to the bottom of the container. Holm et al. teaches an apparatus for fluidizing activation of particulate materials. Holm et al. teaches a sloped membrane support (slip plane 12) and membrane (fabric 12A). Holm et al. teaches that "it is possible to reduce the inclination of slip plane 12 from earlier commonly used values of 20-45° down to about 5°" [C 3, L35-37]. Holm et al. teaches that “the reduction of the slope angle ...affords considerable economical saving by more efficient utilization of the capacity of the container...” [C 3, L 40-43]. It would have been obvious to one of ordinary skill at the

time of the invention to use the range claimed with no unexpected result. In re Aller, 135 USPQ 233, (1955) states, "Normally, change in temperature, concentration, or both, is not patentable modification; however, such changes may impart patentability to process if ranges claimed produce new and unexpected result which is different in kind and not merely in degree from results of prior art; such ranges are termed "critical" ranges, and applicant has burden of proving such criticality; even though applicant's modification results in great improvement and utility over prior art, it may still not be patentable if modification was within capabilities of one skilled in art; more particularly, where general conditions of claim are disclosed in prior art, it is not inventive to discover optimum or workable ranges by routine experimentation."

19. **Claims 8, 12, and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson as applied to claims 1 and 15 above, and further in view of Reuter (USP 3937521)**.

20. **Regarding Claim 8**, Atkinson teaches the container of Claim 1. Atkinson fails to teach that each membrane is inclined at an angle of from 10° to 15° relative to the bottom of the container. Reuter teaches a gas permeable membrane or diaphragm 13 inside a pressure vessel. Reuter teaches [C 36, L 41-44] "As to the angle at which the membrane may be installed, this may be varied by virtue of the type of material used, and by the moisture content, and the slope may range from 5° to say 15°." It would have been obvious to one of ordinary skill at the time of the invention to use the range claimed with no unexpected result. See In re Aller as stated above.

21. **Regarding Claim 12**, Atkinson teaches the container of Claim 1. Atkinson teaches the membrane is made of 4-ply canvas or belting [P 3, L15], which the examiner

interprets to be a woven fabric. Atkinson fails to teach the membrane is made of porous metal sheet or porous plastic sheet. Reuter teaches a gas permeable membrane or diaphragm 13 inside a pressure vessel. Reuter teaches [C 10, L 54-69], "As to the gas permeable membrane 13, shown in FIG. 1, this may be variously constituted to carry out various requirements. The membrane 13 may be a flexible diaphragm as of a heavily woven cloth, as of cotton, or of a synthetic or plastic cloth as of nylon or Dacron. Also instead of being flexible the membrane may be rigid or substantially rigid. Thus it may be of woven metal, or of non-corrosive woven metal, such as stainless steel, to combat corrosion. Also it may be of a porous ceramic, also to avoid corrosion, as well as to provide a stable membrane. An additional advantage in their being selectivity in the synthesis of the membrane resides in the fact that a wider range of materials can be handled to pass through the membrane under the most advantageous conditions where this selectivity is available." It would have been obvious to one of ordinary skill at the time of the invention to select from a variety of membrane materials as disclosed by Atkinson and Reuter and use the membrane in a manner that would not achieve any unexpected result. The mere selection of a known material on the basis of suitability for intended use has been found to be obvious (In re Leshin, 125 USPQ 416).

22. **Regarding Claim 16**, Atkinson teaches the method of Claim 15. Atkinson fails to teach the method wherein, during the loading of the bulk powder into the container, air is extracted therefrom and the method wherein air is extracted from below the membrane, thereby drawing entrapped air from the powder and through the membrane to increase the bulk density of the powder. Reuter teaches a gas permeable membrane or diaphragm 363 inside a pressure vessel. Reuter teaches that the materials "may be

granular, crystalline, or powdered" [C 36, L 34-36]. Reuter teaches [C 11, L 20-26] "wherein a fluid flow pump or pressure vessel is adapted to be filled by the pull of vacuum applied beneath the perforate diaphragm or membrane that divides the pressure vessel into a material plenum above the diaphragm and a gas plenum therebelow." It would have been obvious to one of ordinary skill at the time of the invention to apply a vacuum to the space below the membrane to extract air from the bulk powder to increase its density.

23. **Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson as applied to claim 1 above, and further in view of Hinkle et al. (US Pub 20020134786 A1).**

Atkinson teaches the container of Claim 1. Atkinson fails to teach the container is cylindrical or the container is a pressure vessel located within a standard ISO Tank Container dimensioned frame. Hinkle et al. teaches a container module for intermodal transportation and storage of dry flowable product [Para. 0032, L 1-4]. The container has a cylindrical shape as illustrated in Figure 1. Hinkle et al. teaches that criteria for container modules are set out in ISO Standard 1496-4, a standard that is well known in the art. [Para. 0004, Line 14-18]. It would have been obvious to one of ordinary skill at the time of the invention to substitute the cylindrical container of Hinkle et al. for the container of Atkinson with predictable results and that the container should conform to ISO standards as was known in the art.

Allowable Subject Matter

24. Claims 2, 3, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Anderson (USPN 4353668) is drawn to a hopper unit with a permeable membrane. Hart (USPN 4371295) is drawn to a powder sprayer unit. Nilsson (USPN 4823989) is drawn to a pneumatic vessel for dry materials. Podd et al. (USPN 5547331) is drawn to an air-permeable pad for loading/unloading cargo containers. Toth et al. (USPN 5647514) is drawn to a container with an external frame. Kee et al. (USPN 5960974) is drawn to a container with an external frame. Tilley (USPN 6666628) is drawn to a pneumatic tank for storage and high-volume discharge of pulverulent material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William R. Harp whose telephone number is (571) 270-5386. The examiner can normally be reached on Monday - Thursday, 8:30 AM - 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on (571) 272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. R. H./
Examiner, Art Unit 4174

/Jacob Y. Choi/
Primary Examiner